

REMARKS

In the non-final Office Action, the Examiner rejects claim 15 under 35 U.S.C. § 102(b) as anticipated by Uriu et al. (U.S. Patent No. 5,301,184); rejects claims 1-7, 10, 12-14, 16, and 17 under 35 U.S.C. § 103(a) as unpatentable over Uriu et al.; rejects claim 9 under 35 U.S.C. § 103(a) as unpatentable over Uriu et al. in view of Branth et al. (U.S. Patent No. 6,822,958); and rejects claims 18-21 under 35 U.S.C. § 103(a) as unpatentable over Ishibashi et al. (U.S. Patent No. 5,663,949) in view of Uriu et al.

By this Amendment, Applicant amends claims 1, 5, 7, 10, 12, 15, 16, 18, and 20 to improve form, cancels claims 2-4 without prejudice or disclaimer, and adds claims 22-26. Claims 1, 5-7, 9, 10, and 12-26 are pending. No new matter has been added. Support for the claims can be found throughout the originally filed specification, for example, at p. 3, paragraph 14; p. 4, paragraph 17; p. 6, paragraph 22; p. 7, paragraph 24; p. 9, paragraph 30; and p. 10 paragraph 32.

Claim 15 stands rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Uriu et al. (Office Action, p. 2, paragraph 2). Applicant respectfully traverses the rejection.

A rejection under 35 U.S.C. § 102 requires that a single reference teach every aspect of the claimed invention either expressly or impliedly. Any feature not directly taught must be inherently present. In other words, the identical invention must be shown in as complete detail as contained in the claim. See M.P.E.P. § 2131. For at least the following reasons, Uriu et al. does not disclose or suggest the combination of features recited in claim 15.

Amended independent claim 15 is directed to a controller comprising packet forwarding logic configured to forward a stream of packets to first and second service modules, each of the first and second service modules to obtain identical state information from the packets, the

packet forwarding logic using destination address information within the packets to form the stream; selection logic configured to select one of the first or second service modules based on a status signal indicating whether the first service module has failed; and discard logic configured to discard packets processed by the first service module if the status signal indicates that the first service module has failed and to discard packets processed by the second service module if the status signal indicates that the first service module has not failed. Uriu et al. does not disclose this combination of features.

For example, Uriu et al. does not disclose or suggest each of first and second service modules to obtain identical state information from the packets. The Examiner relies on Uriu et al. at col. 1, lines 44-48 and col. 8, lines 4-9, as disclosing similar features. (Office Action, p. 6). Applicant respectfully disagrees.

Col. 1, lines 44-48 of Uriu et al. discloses:

If a fault has occurred in the active system, the active system is switched to the standby system, while the standby system is switched to the active system. The above switchover is achieved by means of, for example, hardware.

This section of Uriu et al. discloses a redundancy system in which the active system and the standby system are functionally switched when a fault occurs in the active system. Nowhere in this section or elsewhere does Uriu et al. disclose or suggest each of first and second service modules that obtains identical state information from the packets.

Col. 8, lines 4-9 of Uriu et al. discloses:

The ATM cells having identical information are respectively output to the multiplexers 32a and 32b. In this case, the ATM cell output to the active system has the active-system indication bit "1", and the ATM cell output to the standby system has the active-system indication bit "0".

This section of Uriu et al. discloses a duplication system in which otherwise identical ATM cells are respectively output to multiplexers 32a and 32b, one having the active-system indication bit

“1” and the other having the active-system indication bit “0.” Nowhere in this section or elsewhere does Uriu et al. disclose or suggest each of first and second service modules that obtains identical state information from the packets.

Thus, Uriu et al. fails to disclose or suggest each of first and second service modules to obtain identical state information from the packets, as recited in claim 15. In contrast, Uriu et al. merely discloses duplicate ATM cell streams in which each stream's status as active or standby is indicated. The status information of Uriu et al. is not equivalent to identical state information obtained from the packets, as required by amended claim 15.

For at least these reasons, Applicant submits that claim 15 is not anticipated by Uriu et al. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 15 under 35 U.S.C. § 102(b) based on Uriu et al.

Pending claims 1, 5-7, 10, 12-14, 16, and 17 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Uriu et al. (Office Action, p. 3, paragraph 4; p. 6, paragraph 5; p. 7, paragraph 6; and p. 9, paragraph 8). Applicant respectfully traverses the rejection.

Amended independent claim 1 is directed to an apparatus for forwarding packets. The apparatus comprises a plurality of inputs configured to receive respective incoming streams of data packets; a plurality of outputs configured to transmit respective outgoing streams of data packets; packet forwarding logic configured to form outgoing streams of data packets from the data packets contained in the incoming streams, using destination address information contained in the data packets of the incoming streams; redundancy logic configured to transmit a first outgoing stream of data packets formed by the packet forwarding logic to a first output and a second output and further configured to discard data packets contained in a selected incoming stream from one of a first input or a second input before the data packets contained in the

selected incoming stream are included in any outgoing data streams; a first service module to process data packets contained in the first outgoing stream; and a second service module to process data packets contained in the first outgoing stream, wherein each of the first and second service modules maintains identical state information based upon state information obtained from the data packets contained in the first outgoing stream. Uriu et al. does not disclose or suggest this combination of features.

For example, Uriu et al. does not disclose or suggest that each of first and second service modules maintains identical state information based upon state information obtained from the data packets contained in a first outgoing stream, as required by amended claim 1, for at least reasons similar to the reasons given above with respect to claim 15.

For at least these reasons, Applicant submits that claim 1 is patentable over Uriu et al. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 103(a) based on Uriu et al.

Claims 5-7 depend from claim 1 and thus are patentable over Uriu et al. for at least the reasons given above with respect to claim 1. Moreover, these claims recite additional features not disclosed or suggested by Uriu et al.

For example, amended claim 7 recites that upon receipt of an indication that a first service module has failed and an indication that a second service module is operational, redundancy logic designates the second service module to be primary and the first service module to be secondary. The Examiner relies on col. 1, lines 40-48 of Uriu et al. as allegedly disclosing upon receiving an indication that the first service module has failed, the redundancy logic designates the second service module to be primary and the first service module to be secondary. Nowhere does Uriu et al. disclose or suggest, however, that designation of a second

service module to be primary and a first service module to be secondary occurs upon receiving an indication that the second service module is operational, as required by amended claim 7.

For at least these additional reasons, Applicant respectfully submits that claim 7 is patentable over Uriu et al. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 5-7 under 35 U.S.C. § 103(a) based on Uriu et al.

Amended independent claim 10 is directed to a method of forwarding data packets, comprising: forming a first data stream from received data packets; transmitting the first data stream to both a first service module and a second service module, wherein identical state information is maintained in each of the first and second service modules based upon state information obtained from the transmitted first data stream; receiving an indication of whether the first service module has failed; if the indication indicates that the first service module has not failed, discarding packets processed by the second service module; and if the indication indicates that the first service module has failed, discarding packets processed by the first service module. Uriu et al. does not disclose or suggest this combination of features.

As discussed above with respect to claim 15, Uriu et al. does not disclose or suggest that identical state information is maintained in each of the first and second service modules based upon state information obtained from the transmitted first data stream, as required by amended claim 10.

For at least these reasons, Applicant submits that claim 10 is patentable over Uriu et al. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 10 under 35 U.S.C. § 103(a) based on Uriu et al.

Claims 12-14 depend from claim 10 and thus are patentable over Uriu et al. for at least the reasons given above with respect to claim 10. Accordingly, Applicant respectfully requests

reconsideration and withdrawal of the rejection of claims 12-14 under 35 U.S.C. § 103(a) based on Uriu et al.

Amended independent claim 16 is directed to an interface module usable in a system for forwarding packets. The interface module comprises an ingress port for receiving an incoming stream of data packets; a transfer unit configured to transmit the data packets contained in the received incoming stream to each of a plurality of forwarding planes connectable to the interface module, wherein identical state information is maintained in two or more of the plurality of forwarding planes based upon state information obtained from the transmitted data packets; an egress port for transmitting an outgoing stream of data packets; and a switchover unit configured to select one of the plurality of forwarding planes connectable to the interface module and to form the outgoing stream of data packets from data packets received from the selected forwarding plane. Uriu et al. does not disclose or suggest this combination of features.

As discussed above with respect to claim 15, Uriu et al. does not disclose or suggest that identical state information is maintained in two or more of the plurality of forwarding planes based upon state information obtained from the transmitted data packets, as required by amended claim 16.

For at least these reasons, Applicant submits that claim 16 is patentable over Uriu et al. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 16 under 35 U.S.C. § 103(a) based on Uriu et al.

Claim 17 depends from claim 16 and thus is patentable over Uriu et al. for at least the reasons given above with respect to claim 16. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 17 under 35 U.S.C. § 103(a) based on Uriu et al.

Claim 9 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Uriu et al. in view of Branth et al. (Office Action, p. 8, paragraph 7). Applicant respectfully traverses the rejection.

Claim 9 depends from claim 1. Thus, claim 9 is patentable over Uriu et al. and Branth et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 1. Branth et al. does not cure the deficiencies of Uriu et al. identified above with respect to claim 1.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 9 under 35 U.S.C. § 103(a) based on Uriu et al. and Branth et al.

Claims 18-21 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Ishibashi et al. in view of Uriu et al. (Office Action, p. 13, paragraph 9). Applicant respectfully traverses the rejection.

Amended independent claim 18 is directed to a system for forwarding packets. The system comprises first and second forwarding planes, each configured to receive packets from a plurality of interface modules and transmit received packets to a plurality of interface modules, wherein the first and second forwarding planes maintain identical state information based upon state information obtained from the received packets; and a first interface module coupled to the first and second forwarding planes, the first interface module receiving packets contained in an incoming stream at an ingress port and transmitting the packets to the first forwarding plane and the second forwarding plane, the first interface module further receiving data packets from each of the first and second forwarding planes and transmitting at an egress port data packets from a selected one of the first and second forwarding planes. Ishibashi et al. and Uriu et al., whether

taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

As discussed above with respect to claim 15, Uriu et al. does not disclose or suggest first and second forwarding planes that maintain identical state information based upon state information obtained from the received packets, as required by amended claim 18. Ishibashi et al. does not cure the above-identified deficiencies of Uriu et al.

For at least these reasons, Applicant submits that claim 18 is patentable over Ishibashi et al. and Uriu et al., whether taken alone or in any reasonable combination. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 18 under 35 U.S.C. § 103(a) based on the combination of Ishibashi et al. and Uriu et al.

Claims 19-21 depend from claim 18 and thus are patentable over Uriu et al. for at least the reasons given above with respect to claim 18. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 19-21 under 35 U.S.C. § 103(a) based on the combination of Ishibashi et al. and Uriu et al.


New dependent claims 22-25 are patentable for at least the reasons given above with respect to the base claims from which claims 22-25 respectively depend. Accordingly, allowance of new claims 22-25 is solicited.

In view of the foregoing amendments and remarks, Applicant respectfully requests the Examiner's reconsideration of this application, and the timely allowance of the pending claims.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

HARRITY & SNYDER, L.L.P.

By: 

Garth D. Richmond
Reg. No. 43,044

11350 Random Hills Road
Suite 600
Fairfax, Virginia 22030
(571) 432-0800
Customer Number: 44987
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